

US Pat. SN 09/916,780

introducing a cassette into a plant, said cassette comprising a transgene that expresses a protein conferring a trait of interest during a selected developmental stage in the plant, said transgene flanked 3' by a FRT or Lox P excision site and flanked 5' by a FLP or CRE coding sequence operably linked to an organ-specific, developmental-stage specific, or chemically inducible promoter, said FLP or CRE coding sequence being downstream from a second FRT or LoxP excision site, wherein stimulation of the inducible promoter induces expression of FLP or CRE wherein the FLP or CRE interacts with the excision site causing excision of the transgene.

50. (new) The method of claim 49 wherein the transgene is flanked 3' by a FRT and a Lox P excision site, flanked 5' by FLP and CRE coding sequences each operably linked to an organ-specific, developmental-stage specific, or chemically inducible promoter, said FLP and CRE coding sequences being downstream from a second FRT and a second LoxP excision site, wherein stimulation of the inducible promoter induces expression of FLP and CRE, wherein the FLP and CRE respectively interact with the FRT and LoxP excision sites to cause excision of the transgene.
51. (new) A method for reversible introduction of a transgene into a plant genome, comprising:

introducing a cassette into a plant, said cassette comprising a transgene that expresses a protein conferring a trait of interest during a selected developmental stage in the plant, said transgene flanked 3' by a FRT or Lox P excision site and flanked 5' by a FLP coding sequence operably linked to an organ-specific, developmental-stage specific, or chemically inducible promoter, said FLP coding sequence being downstream from a second FRT excision site, wherein stimulation of the

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inducible promoter induces expression of FLP wherein the FLP interacts with the excision site causing excision of the transgene.

52. (new) A method for reversible introduction of a transgene into a plant genome, comprising:

introducing a cassette into a plant, said cassette comprising a transgene that expresses a protein conferring a trait of interest during a selected developmental stage in the plant, said transgene flanked 3' by a Lox P excision site and flanked 5' by a CRE coding sequence operably linked to an organ-specific, developmental-stage specific, or chemically inducible promoter, said CRE coding sequence being downstream from a second LoxP excision site, wherein stimulation of the inducible promoter induces expression of CRE wherein the CRE interacts with the excision site causing excision of the transgene.

53. (new) The method of claim 49 or 50 wherein the cassette further comprises a marker gene located between the excision sites.
54. (new) The method of claim 53 wherein the marker gene is kanamycin resistance gene.
55. (new) The method of claim 49 or 50 wherein the trait of interest is selected from the group consisting of growth habit, color, maturity, yield, mortality, sterility, disease resistance, metabolite production, and appearance
56. (new) The method of claim 49 wherein the transgene encodes a phenotypic plant trait.

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57. (new) The method of claim 56 wherein the phenotypic trait of interest is color, appearance or growth habit.
58. (new) The method of claim 49 or 50 wherein the organ-specific, developmental stage-specific or inducible promoter is selected from the group consisting of AG, AGL5, Bcp1, LAT52, PLENA, SIM, avrRp2 and alc.
59. (new) The method of claim 49 or 50 wherein the cassette further comprises a DNA encoding a transcription factor specific for an externally activated promoter operably linked to FLP.
60. (new) The method of claim 49 or 51 wherein the promoter operably linked to FRT is a pollen specific promoter.
61. (new) The method of claim 50 or 52 wherein wherein the promoter operably linked to CRE is a pollen specific promoter.

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